

Migratory Behaviour of Birds Around The Pond At Village Choharian Wali, District Fazilka (Punjab).

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Abstract

Ponds provides a high nutritional support for the birds to survive and breed. Presence of fishes in the pond is one important factor resulting in selection of pond as habitat. Many birds reside on and around these ponds and many are migratory. Bird migration occurs during the autumn every year from their places of breeding to their wintering places which are thousands of kilometres far- away. Migration means travelling for longer time at very long distances, which may involve crossing certain barriers that may be mountains or rivers. (R.Wiltschko, 2003). Punjab has cold winters and hot summers. Birds are found at various ponds in Punjab region they exhibit distinct ecological behavioural patterns. One of the pond in Punjab is located in village Choharian wali, District Fazilka (Punjab). Migratory Behaviour of Birds at this pond was studied from September 2020 to March 2021.

Keywords: ponds, Migration, Punjab, behavioural patterns.

Introduction

Punjab is rich in population of birds. It also has rich diversity of migratory birds due to climatic and other environmental factors. Birds are found at various ponds in Punjab region they exhibit distinct ecological behavioural patterns.

Climate of Punjab is tropical, semi-arid, hot and subtropical monsoon type that has colder winters and hot summers. Birds require food, water, space, etc. The harbouring water

bodies provides nutrition and must also provide protection. For this, productivity of these water bodies must be kept higher by maintaining the quality of water in these water bodies.

Waterbirds are bio-indicators of ecological conditions. Benthic Fauna and Planktons in the water bodies are the major sources of food for the water birds. These water birds adapt themselves according to their surrounding environment. They have several adaptations to feed in water like long bills, webbed feet.

Certain ecological factors and behavior such as competition, breeding, nesting and seasonal changes result in bird migration. Alteration in day length is also responsible for bird migration. Bird Migration refers to movement of birds from their indigenous areas to new places and back. Birds in the winter season migrate towards equator to protect themselves from cold. As winter comes, birds start to arrive in various parts of Punjab. Fresh water wetlands or ponds are the attractive sites for migratory birds.

In wetlands, avian diversity depend on type of vegetation present there and the availability of food resources (Rathore and Padate, 2017; Veeramani et al., 2018). An important activity for the survival of birds is their feeding habit (Panda et al., 2021). Ecology of bird species can be analysed by their feeding guild characters. This is also useful to assess particular ecological factors leading to changes in community. Birds of similar guild, use the same resources in a same way.

Many ecological factors have a significant role in ecosystem such as water abundance, water quality, temperature, salinity, Acidity, food choices, climate of surrounding area, etc. To catch their prey, these water birds usually dive from surface or air. Their prey is usually a fish, insect or crustaceans or may be some aquatic plants.

The present study was conducted in a man- made pond located at village Choharian Wali, Fazilka. Many migratory and Resident/ Local migratory birds have been observed during the study period.

Material and Methods

Study Area

Behaviour of birds was investigated at the pond located in village choharian wali, District Fazilka. (30°23'36"N latitude and 74°05'22"E longitude). The study was conducted from September 2020 to March 2021.

The Choharian Wali Pond is located around 8 km from Fazilka. It is an artificially constructed pond used for Pisciculture and other irrigation purposes of crop fields near to it. The pond is spread around 0.6 km². It has a depth of 11ft but level of water usually remains around 6-7ft. The level of this pond gets lowered or sometime gets dried during extreme hot months of summers and gets filled up again in monsoon season by the rain water.

The pond has gravelly and muddy bank areas. This pond is surrounded by crop fields on one side and on other sides by 2-3 small perennial ditches. The pond has abundant aquatic weeds, aquatic invertebrates like crustacean, worms, flies, aquatic insects, fish, frogs, etc.

The important flora of the study area includes grassy and muddy area, scattered vegetation present in the form of shrubs and trees such as *Azadirachta indica*, *Acacia arabica*, *Acacia nilotica*, *Mimosa nilotica*, *Prosopis juliflora*, *Prosopis cineraria*, etc. grasses like congress grass (*Parthenium hysterophorus*), Indian lovegrass (*Eragrostis pilosa*) covers the area surrounding the pond.

Survey Methods

Observations of the birds were done thrice a day: In the Morning, Afternoon and Evening. The birds were observed with the help of binoculars. Behavioural study was done through Binoculars, Mobile phone, photographic camera. The Mobile Phone and camera were also used for capturing photographs of the birds. Identification of the birds was done by use of using google lens, ebird app, Merlin app, authentic books like Hand Book of the Birds of India and Pakistan (Salim Ali, S Dhillon), The Book of Indian Birds (Salim Ali). Certain information was also collected from the local villagers. The birds show different types of behavioural patterns; arrival behaviour, stay, etc. These observations were recorded in the field book.

Results and discussions

Migratory behaviour of following birds was studied like **Common Moorhen** (*Gallinula Chloropus*), **Common coot** (*Fulica atra*), **Black winged stilt** (*Himantopus himantopus*), **Pied stilt** (*Himantopus leucocephalus*), **Painted stork** (*Mycteria leucocephala*), **Great Egret** (*Ardea alba*), **Northern shoveler** (*Spatula clypeata*), **Red-wattled Lapwing** (*Vanellus indicus*). All of these observed birds have different migratory status. These are migratory, local migratory and Resident/Local Migratory. Their Migration status has been shown in Table 1. The total number of birds arrived and the time of arrival of different migratory birds have been shown different from each other from September 2020 to March 2021. This arrival behaviour is depicted in Table 2

Name of Bird	Scientific Name	Family	Migration status
Common Moorhen	<i>Gallinula Chloropus</i>	Rallidae	Resident/Local Migratory
Common coot	<i>Fulica atra</i>	Rallidae	Resident/Local Migratory
Black winged stilt	<i>Himantopus himantopus</i>	Recurvirostrida	Migratory
Pied stilt	<i>Himantopus leucocephalus</i>	Recurvirostrida	Migratory
Painted stork	<i>Mycteria leucocephala</i>	Ciconiidae	Local Migratory
Great Egret:	<i>Ardea alba</i>	Ardeidae	Migratory
Northern shoveler	<i>Spatula clypeata</i>	Anatidae	Migratory
Red-wattled Lapwing	<i>Vanellus indicus</i>	Charadriidae	Resident/Local Migratory

Table 1: List of Migratory Birds arrived and their Migration Status.

Behavioural Observations collected species wise are described in the study. Different species show different behavioural patterns related to arrival, stay and flock size. Small number of birds arrives to this pond around winters and the flock size increases as the winters progresses. Observations of behaviour of each bird species are as follows:

Common Moorhen (*Gallinula Chloropus*): Common Moorhen also known as water hen or swamp Chicken belongs to family Rallidae. It is found in various parts of Europe and Asia, Africa, India and Indonesia. These birds migrates to warm areas during winters from the areas where the water freezes. Migration in moorhen usually occurs at night. Migration occurs upto 2000km from its colder breeding area. These birds were observed to arrive in 1st flock of 10 2nd flock of 15 birds. The first two flocks arrived during September first two weeks and last two flocks each with 5 moorhens arrived during October mid. Thus, a total of 35 Common Moorhens arrived.

Common coot (*Fulica atra*): It belongs to family Rallidae. It is distributed in New Zealand, Australia, Europe, Africa and Indian Subcontinents. It is a medium sized blackish brown bird with white bill. It occurs in fresh water bodies, ponds, rivers, lakes, etc .

8 members of coot birds arrived during 2nd week of September and 9 during 3rd week of September, later no coot arrived.

Black winged stilt (*Himantopus himantopus*): This bird belongs to Stilt Family (Recurvirostrida). These birds occurs in ponds and lakes with shallow water. These are distributed throughout Africa, America, Eurasia. The Northern breeding populations make long distance migrations.

6 members and 7 of this bird species arrived the first and second week of September, another flock of 7 birds arrived in 2nd week of October and 8 members arrived during last week of october. A total of 28 birds were observed.. No more birds of this species arrived at this pond after this.

Pied stilt (*Himantopus leucocephalus*): It is a stilt that belongs to family Recurvirostridae. These birds are mostly residents of New Zealand and Australia. These are most commonly seen on shores of ponds and lakes.

5 members of this species arrived on last week of September. Two flocks of Pied stilt birds; each consisting of 5 birds arrived during the last week of October and in the mid of December respectively. Thus, 15 pied Stilts were observed.

Painted stork (*Mycteria leucocephala*): It is nearly threatened large wader bird species with a long- yellow bill and belongs to family Ciconiidae. It is present widely Asia (particularly in Tropical plains) and also in Indian sub-continent (South of Himalyas). These are mainly found in Fresh water marshes, ponds and in flooded crop fields. Painted Stork is known to show Local/ Inland Movements so, it is considered as Local- Migratory bird.

During the study, it was observed that first flock of 5 painted storks arrived at the mid of January and second flock of 6 birds arrived during first week of February and third flock of 7 painted birds arrived during last week of February. After these 18 birds, no more Painted stork arrived.

Great Egret (*Ardea alba*): It is also known as large egret, great white heron, great white egret found most in Northern areas of Europe. It belongs to family Ardeidae. It is a tall wading bird with long legs and S- shaped curved neck. It is found in Asia, America and certain parts of Europe. It lives in fresh water, salty marshes or Ponds.

In Areas where the temperature is too low that water freezes during winters, Egrets migrates.

7 of these birds arrive in the first week of September, 8 birds in the mid of October and 7 of these birds came in the first week of December. A total of 22 Great Egret birds arrived.

Northern shoveler (*Spatula clypeata*): It belongs to Family Anatidae. It is mainly present in Asia, America, Africa and in Indian Sub-Continents. It occurs in in ponds, lakes, marshes and some flooded crop fields.

Only 6 of these birds arrived around in mid of November.

Red-wattled Lapwing (*Vanellus indicus*)

Its local name is Tatiri. This bird belongs to Family Charadriidae. These birds are most commonly seen in pairs or small groups near to the water bodies. It is a resident Local migratory bird that moves from high altitudes to low altitudes and Plains during arrival of winters to protect themselves from the extreme cold temperatures.

8 of these birds were observed during September First week. Arrival of 6 birds were observed during September last week. 8 of these birds were observed during 2nd week of October and 6 Lapwings were observed during 1st week of November. A total of 28 Red-wattled Lapwings were observed.



Red- Wattled
Lapwing



Pied- stilt



common
Moorhen
(Juvenile)



Great Egret



Black winged stilt



Painted Stork

Figure 1: pictures of some migratory birds observed at village Choharian Wali, District Fazilka (Punjab)

Name of Bird	Scientific Name	Total number of birds arrived	Arrival Time
Common Moorhen	Gallinula Chloropus	35	1 st , 2 nd and 3 rd week of September and 4 th flock in the October-mid
Common coot	Fulica atra	17	2 nd and 3 rd week of September
Black winged stilt	Himantopus himantopus	28	1 st and 2 nd week of September and in 2 nd And last week of October
Pied stilt	Himantopus leucocephalus	15	sLast week of September, last week of October and in the mid of December.
Painted stork	Mycteria leucocephala	18	In the Mid of January, 1 st and last week of February
Great Egret	Ardea alba	22	In the 1 st week of September, mid of October and 1 st week of December
Northern shoveler	Spatula clypeata	6	In the Mid of November
Red-wattled lapwing		28	September last week, October 2 nd week and November 1 st week.

Table 2: Table depicting total number of Migratory birds arrived and their arrival time

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